Title (en)

SUPERCONDUCTING MICROWAVE-FREQUENCY VIAS FOR MULT-PLANAR QUANTUM CIRCUITS

Title (de)

SUPRALEITENDE MIKROWELLENFREQUENZ-KONTAKTLÖCHER FÜR MULTIPLANARE QUANTENSCHALTUNGEN

Title (fr)

TROUS D'INTERCONNEXION HYPERFRÉQUENCE SUPRACONDUCTEURS POUR CIRCUITS QUANTIQUES MULTIPLANAIRES

Publication

EP 3427310 A4 20191023 (EN)

Application

EP 16893754 A 20160310

Priority

US 2016021664 W 20160310

Abstract (en)

[origin: WO2017155531A1] Embodiments of the present disclosure provide a metallization stack that includes a superconducting signal via extending between a patterned top superconducting surface and a patterned bottom superconducting surface of a substrate, and a plurality of superconducting ground vias extending between the patterned top and bottom surfaces of the substrate substantially parallel to the signal via. The superconducting ground vias may be arranged in a ring, with the signal via being at a center of the ring. The signal via and the plurality of ground vias are configured to provide DC to microwave-frequency connectivity to at least one quantum circuit component housed by the substrate by virtue of each via being implemented as an opening having inner sidewalls coated with a layer of a superconducting material having a thickness of at least 50 nanometers.

IPC 8 full level

H10N 60/80 (2023.01); **H10N 60/01** (2023.01); **H10N 60/82** (2023.01); **H10N 60/83** (2023.01); **H10N 60/85** (2023.01)

CPC (source: EP)

B82Y 10/00 (2013.01); **G06N 10/00** (2019.01); **H01L 23/49888** (2013.01); **H10N 60/80** (2023.02); H01L 23/49827 (2013.01); H01L 23/49838 (2013.01); H01L 23/50 (2013.01)

Citation (search report)

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